

**ABSTRACT**

An exemplary embodiment of the invention is a dispersion compensation module for compensating dispersion in a communications network. The dispersion compensation module includes dispersion compensating fiber having a dispersion coefficient that varies with wavelength. A thermal regulator adjusts the temperature of the dispersion compensating fiber to adjust the dispersion characteristic of the dispersion compensating fiber. Alternate embodiments of the invention include a communications system using the dispersion compensation module and a method for compensating dispersion.